

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Claim 1 (original): A synthetic peptide comprising the amino acid sequence GPRLGYSWHX, wherein the amino acids are D-amino acids and X is any amino acid.

Claim 2 (original): A peptide according to claim 1, wherein X is E, Q, P or G.

Claim 3 (previously presented): A peptide according to claim 1 comprising the amino acid sequence GPRLGYSWHE (SEQ ID NO:1).

Claim 4 (currently amended): A peptide according to claim 32, ~~claim 1 which further includes~~ wherein the D-amino acid residue is a cysteine residue at the C-terminus end.

Claim 5 (original): A peptide according to claim 4, comprising the amino acid sequence GPRLGYSWHEC (SEQ ID NO:2).

Claim 6 (previously presented): A vaccine composition capable of eliciting an immunological response in an animal to which it is administered, the composition comprising:

- (a) an immunogenic peptide according to claim 1; and
- (b) a pharmaceutically acceptable carrier or excipient.

Claim 7 (original): A vaccine composition according to claim 6, wherein the peptide is not conjugated to or administered with a carrier or an adjuvant.

Claim 8 (original): A vaccine composition according to claim 6, wherein the peptide is conjugated to or administered with at least one carrier or adjuvant.

Claim 9 (original): A vaccine composition according to claim 8, wherein the adjuvant is selected from the group consisting of CpGs, M59, IFA (incomplete Freund's adjuvant), complete Freund's adjuvant, alum, bile salts, vitamins and attenuated toxins.

Claim 10 (original): A vaccine composition according to claim 9, wherein the attenuated toxins are selected from pertussis and cholera.

Claim 11 (previously presented): A vaccine composition according to claim 6 for use in a method of contraception or for controlling fertility or heat in an animal.

Claim 12 (previously presented): A vaccine composition according to claim 6 for use in treating a disease in an animal.

Claim 13 (previously presented): A vaccine composition according to claim 6 wherein the animal is a human, a domestic animal, a wild animal, livestock or a fish.

Claim 14 (previously presented): A vaccine composition according to claim 12 wherein the disease is a sex hormone-related disease in a human.

Claim 15 (previously presented): A vaccine composition according to claim 14, wherein the disease is selected from the group consisting of prostatic cancer, breast cancer, ovarian cancer, uterine cancer, endometriosis, uterine fibroids and precocious puberty.

Claim 16 (previously presented): A vaccine composition according to claim 6 which is administered orally, nasally, sub-cutaneously or trans-cutaneously to the animal.

Claim 17 (previously presented): A method of treating a disease in an animal by administering a peptide according to claim 1 to the animal in an amount sufficient to elicit an immune response against GnRH in the animal.

Claim 18 (original): A method according to claim 17, wherein the disease is a sex hormone-related disease in a human.

Claim 19 (previously presented): A method according to claim 18, wherein the disease is selected from the group consisting of prostatic cancer, breast cancer, ovarian cancer, uterine cancer, endometriosis, uterine fibroids and precocious puberty.

Claim 20 (previously presented): A method of controlling fertility in an animal by administering a peptide according to claim 1 to the animal in an amount sufficient to elicit an immune response against GnRH which inhibits or substantially reduces fertility of the animal.

Claim 21 (previously presented): A method of controlling the heat cycle in an animal by administering a peptide according to claim 1 to the animal in an amount sufficient to elicit an immune response against GnRH which inhibits or delays the heat cycle of the animal.

Claim 22 (previously presented): A method of contraception comprising the step of administering to an animal a peptide according to claim 1.

Claims 23 - 27 (cancelled)

Claim 28 (previously presented): A peptide according to claim 1 which is conjugated to another peptide.

Claim 29 (currently amended): A peptide according to ~~claim 23~~ claim 28, which is conjugated to the natural gonadotropin-releasing hormone (GnRH) peptide.

Claim 30 (new): A peptide according to claim 1, wherein X is Q.

Claim 31 (new): A peptide according to claim 1, which further comprises a D-amino acid residue at the N- or C-terminus.

Claim 32 (new): A peptide according to claim 31, wherein the D-amino acid residue is a cysteine residue or a glycine residue.